

Study of the loss of several electrons ...

S/056/62/043/002/001, 053  
B102/B104

cross sections are denoted by  $\sigma_{i,i+n}$ ,  $n=2\dots5$ . The electron loss cross section is proportional to the electron number  $q_i$  of the outer shell, so

that  $\sigma_i = (1/q_i) \sum_{s=1}^q s\sigma_{i,i+s}$  for the loss of one electron,  $\sigma_i^{(2)}$

$= c_q^{-2} \sum_{s=2}^q c_s^2 \sigma_{i,i+s}$  for the loss of an electron pair, where  $c_s^2 = s(s-1)/2$ ,

$c_s^2$  and  $c_q^2$  (analogously defined) are the numbers of pairs which can be formed from  $s$  and  $q$  electrons, respectively. Formulas are also given for the loss probability and the cross-section ratios. The results suggest that the loss of an electron is independent of the existence of the others in an ion-atom collision of the medium. The mean loss probability of individual electrons is small and depends on the binding energy of the electron in the ion. Electron losses occur chiefly if the collision parameters are of the order of the electron shell dimensions. The case under consideration (ion scattering angle  $\theta \leq 0.005$  rad) corresponds to

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collision parameters  $p \geq 3 \cdot 10^{-9}$  cm. The experimental values are 5-10 times higher than the cross sections calculated by Russek and Thomas (Phys. Rev. 109, 2015, 1958; 114, 1538, 1959) for these p-values on the basis of the quasimolecular electron loss mechanism. However, the experimental results are in very good agreement with the assumption of a direct interaction. Simultaneous loss of several electrons has a considerable effect on the equilibrium charge distribution when the ion beam passes through the gas, which is nearly Gaussian without multiple electron exchanges. There are 4 figures.

ASSOCIATION: Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta (Institute of Nuclear Physics of Moscow State University)

SUBMITTED: November 14, 1961

Card 3/3

TITLE: Variation of the mean charge of fission ions as a function of the density of the medium. Report presented at the Second All-Union Conference on the Physics of Electronic and Atomic Collisions held in Vologda 2-9 Oct 1962.

SOURCE: AN SSSR, Izvestiya, ser. fiz., v.27, no.8, 1963, 1078-1080

TOPIC TAGS: ion charge, electron loss, electron capture, ionization loss, N

ABSTRACT: The mean charge of uranium fission fragments, established incident to their passage through a gas, is known to increase with increasing gas density. According to N.Bohr and J.Linchard (Kgl.danske vid.selskab.Mat.fys.medd., 28, No. 1, 1954) this is due to the increase in the probability for loss of electrons from the ion fragments with decrease of the interval between successive ionization events. In the present work increase of the mean ion charge incident to increase in gas density was observed in experiments with 4.2 MeV ( $v = 8.2 \times 10^8$  cm/sec) triply charged alpha particles. The protons accelerated were entered a 10 cm dia. by 4.5 meter long collision chamber. The particles traversing the chamber were analyzed by a magnet and detected by proportional counters. The relative numbers  $\Phi_1$

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of ions with different charges were obtained at nitrogen pressures from  $4 \times 10^{-3}$  to  $10^{-2}$  mm Hg. The results are shown in the figure (see Encl. 1) for three values of  $\phi_1$  and the experimental values of  $\phi_1$  and the mean charge  $Z_{mean}$  fairly agree; above  $10^{-2}$  mm Hg the charge distribution in the ion beam approaches an equilibrium value and the  $\phi_1$  curves level off. Above  $>10^{-2}$  mm Hg the mean charge begins to decrease with rising pressure owing to decrease in the ion velocity as a result of collision slowing down. Thus, gas at  $10^{-2}$  mm Hg and up cannot be regarded as sufficiently rarified where passage of light element ions is concerned. This fact and the pressure variation of  $\phi_1$  in the region of lower pressures should be taken into account in using experimental data on  $\phi_1$  for determining electron loss cross sections on the basis of electron capture cross sections (and vice versa).  
Orig.art.has: 1 figure.

ASSOCIATION: none

SUBMITTED: 00

DATE ACQ: 26Aug63

ENCL: 01

SUB CODE: PH

NO REF Sov: 008

OTHER: 004

Card 2/8

L 36124-65 EWT(L) IJP(c) AF  
ACC NR# AP6018803

SOURCE CODE: UR/0056/66/050/1252/1259

AUTHOR: Dmitriyev, I. S.; Nikolayev, V. S.; Teplova, Ya. A.;  
Popov, B. M.; Vinogradova, L. I.

ORG: Institute of Nuclear Physics, Moscow State University (Institut  
yadernoy fiziki Moskovskogo gosudarstvennogo universiteta)

TITLE: Experimental investigation of the effective cross sections  
for destruction and formation of fast negative ions in atomic collisions

SOURCE: Zh eksper i teor fiz, v. 50, no. 5, 1966, 1252-1259

TOPIC TAGS: capture cross section, negative ion, cyclotron, electron  
loss, atomic ~~structure~~ structure

ABSTRACT: The effective cross sections of loss of one, two, or three  
electrons in helium, nitrogen, or argon have been measured for negative  
carbon, nitrogen, and oxygen ions produced as a result of a charge  
exchange of positive ions accelerated in a 72-cm cyclotron to a velocity  
of  $v = 2.6 \times 10^8$  cm/sec. The cross section of simultaneous loss of two

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L 36124-66

ACC NR: AP6018803

electrons by negative ions is ~50-70% of the cross section of loss of a single electron. Comparison of the results obtained with the known cross sections of electron loss by other negative or positive ions shows that the specificity of negative ions, expressed in the weak coupling of the outer electron with the ion frame, does not appreciably affect the interaction between the negative ions and the given substance at a velocity  $\gamma=2.6 \times 10^8$  cm/sec. Data on the formation cross sections of negative ions as a result of capture of two electrons by positive ions or capture of an electron by neutral atoms have been obtained for carbon and oxygen. Equilibrium values have been obtained for the fraction of negative carbon or oxygen ions in a beam passing through a sufficiently thick layer of a substance ( $\Phi$ -1). Maximal values of  $\Phi$ -1 are obtained in media in which the formation cross sections of negative ions at a given velocity, attain their maxima. The authors thank the cyclotron team headed by Yu. P. Divnogortsev and A. S. Kondrat'yev, as well as Yu. Druzhinin and V. Kalit for technical support of the cyclotron and experimental equipment. Orig. art. has: 7 figures and 1 table. [Based on authors' abstract] [NT]

SUB CODE: 20/ SUBM DATE: 29Dec65/ ORIG REF: 013/ OTH REF: 004

Card 2/2 llb

<p>145-181-174</p> <p>NAME &amp; BOOK INFORMATION 807/3752</p> <p>Avtobudostroy, Soviet Union, No. 3 (periodical) No. 1 (Collection of Articles), No. 17, Leningrad, September, 1959. 590 p., 5,200 copies printed.</p> <p>Mr. G. I. Kopyrin, Candidate of Technical Sciences; Literary and Tech. Ed.</p> <p>I. I. Dovzhenko.</p> <p>PURPOSE: This collection of articles is intended for scientific personnel at research and educational institutions and industrial plants and also for advanced students.</p> <p>CONTENTS: The articles report the results of investigations of 1) the effects of various factors on the susceptibility of constructional and heat-resistant steels and titanium alloys to brittle failure at various temperatures under various conditions of loading (long-time, short-time, cyclic, monotonic); 2) abilities, structure, and condition of alloys as related to their mechanical properties, and 3) corrosion resistance and evaluation of steeliness and heat-resistance of steels. The articles are accompanied by numerous Soviet and non-Soviet references. No prefaces are mentioned.</p> <p>Savchenko, I. A., Doctor of Technical Sciences, Professor. Structure of Steel-Brittleness Processes During Heating and the Effect of Alloying Elements on Steels</p> <p>Saprykin, Ye. Yu., Candidate of Technical Sciences; N. S. Popov, Engineer and V. V. Kostylev, Subdivision. Effect of Nickel and Copper on Thermal Brittleness of Chrome-Molybdenum-Nickel-Chromium Constructional Steel</p> <p>Moroz, I. S., Doctor of Technical Sciences and T. K. Minina, Engineer. Mechanism of Hydrogen Embrittlement in Steel</p> <p>Gulyam, I. A., Doctor of Technical Sciences, Professor; S. I. Kolosov, Engineer; V. P. Smirnov, Subdivision. Certificate of Chemical Composition and V. I. Dovzhenko, Engineer. Change in Mechanical Properties of Certain Steels Under the Action of Spalling at High Temperatures and Pressures</p> <p>Korot, I. S. and Yu. D. Danilev, Engineer. Investigation of the Mechanism of Hydrogen Embrittlement of Titanium and Its Alloys</p> <p>Sabatul'sh, I. I., Candidate of Technical Sciences. Role of Intermediate Structures in the Heat Treatment of Medium-Alloy Constructional Steel</p> <p>Goldvart, I. Ya., Engineer. Stability of Structures and Properties of Separated Cracks</p> <p>Bogachuk, A. I., Candidate of Technical Sciences. Microscopic and Macroscopic Cracks in Graphite-Enriched Steel</p> <p>Chernikov, V. I., Engineer. Susceptibility of Titanium and Its Aluminim Alloy to Brittle Failure Under Monotonic Loading</p> <p>Chuchalin, S. B., Candidate of Technical Sciences. Investigation of the Relationship Between Size of Specimens and Development of the First Failure Crack in Casting Steel 1 for Mechanical Properties</p> <p>Pashkov, P. O., Doctor of Technical Sciences, Professor. Some Observations on the Strength of Metals as Related to Their Microstructure</p> <p>Shurshakov, S. S., Candidate of Technical Sciences. Investigation of the Initial Portion of Stress-Strain Diagrams and Relaxation of Stress for Graphite-Enriched Steel</p>
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24(6)

PAGE I BOOK EXPLOITATION

SOV/2985

Andreyev, Anatoly Ivanovich

*Matematicheskiy problem prochnosti tvorodogo tel'ego shchimk stekly* (Some Problem in the Strength of Solids). Collection of Articles. Moscow, Izd-vo Akad. SSSR, 1959. 506 p. Printed 2,000 copies privately.

Editorial Board: V. I. Aver'yanov (Tech. Ed.), S. S. Pavlov!

S. N. Tikhonov, Corresponding Member, USSR Academy of Sciences; S. P.

Berdianskikh, Corresponding Member, USSR Academy of Sciences; V. P. Tluman,

Doctor of Physical and Mathematical Sciences, Professor (Phys. Ed.); L. A.

Ulyanov, Doctor of Technical Sciences, Professor; N. A. Tuzikov, Doctor of

Physical and Mathematical Sciences, Professor; V. A. Stepanov, Doctor of Technical

Sciences; Yu. N. Privalov, Doctor of Technical Sciences, Professor; B. S. Turov,

Candidate of Technical Sciences (Deputy Prof. Ed.).

**PURPOSE:** This book is intended for construction engineers, technologists, physico-  
chemists and other persons interested in the strength of materials.

**COVERAGE:** This collection of articles was compiled by the Ordzhonikidze Institute of Physical and Mathematical Sciences (Institute of Applied Physics), and the Putilov-Obninskii Institute of Applied Physics (Institute of Applied Physics, Academy of Sciences, USSR) in commemoration of the 20th Birthday of Nikolay N. Blokhovich, Director, Member of the Ukrainian Academy of Sciences, founder of the Institute of Applied Polymeric Materials (Institute of the Strength of Materials, USSR) at the Leningradskii polytechnicheskii institut (Institute of Technical Education), recipient of the Stalin Prize (Leningrad) (1945) and the Order of Lenin (1955). The articles deal with the strength of materials, phenomena of superelastic elasticity, temper brittleness, hydrogen embrittlement, cold brittleness, influence of deformation speed on the mechanical properties of materials, critique of methods and general problems of the strength, plasticity, and mechanical properties of metals and nonmetals. Numerous references are given at the end of each article.

**REFERENCES:** 1-8, and Yu. N. Privalov, Investigation of the Hydrogen Embrittlement of Two-Phase Titanium Alloys. 140

Privalov, Yu. N., and G.P. Smirnovskaya, Hydrogen Embrittlement of Steel and the Influence of Mechanical Testing Conditions on Its Occurrence. 152

Sokolov, Yu. N., V.D. Shadrin, and S.M. Pol'mer (Institute for Metal Research, Ural Branch, Academy of Sciences, USSR, Novosibirsk) Structure of Carbide Grain Boundaries and the Temper Brittleness of Structural Steel. 165

Aver'yanov, V. I., and V.A. Stepanov (Institut metalurgii, Akad. SSSR, g. Novosibirsk - Kemerovo), Influence of the Degree of Purity of Cold Brittle as and Other Properties of Carbides. 172

Martynov, V. V., P.O. Bobkov, and Yu. N. Privalov, Cold Hardening of Tempered Steel With an External Layer of Amorphous Steel Alloy. 179

Sazanov, E.S. (Industrialnyy Institut imeni Dzerzhinskogo, Sverdlovsk), Influence of Metal and Some Other Factors on Impact Strength of Circular-welded Steel. 187

Shvedov, Mark. (deceased), I.I. Basyuk, and A.V. Klimov, Influence of Temperature Factor During Plastic Deformation and Repair of Specimens of Plastic Strength. 194

Vilenskii, Z.Y., and V.A. Stepanov (Institute of Applied Physics, Academy of Sciences, USSR, Tashkent), Influence of Deformation Rate on the Temperature Resistance of Metals at Impact Speeds of 10-100 m/sec. 207

Zaitsev, I.A. (Institute of Applied Physics, Academy of Sciences, USSR, Gor'kiy), Influence of Compressibility in the Dynamic Deformation of Plastic Bubbles. 222

Dmitrievskii, L.N., and Yu. I. Mintskevich, Influence of a High Deformation Degree of Aging on the Mechanical Properties of Steel Alloy Type V-95 After Martensitic Transformation. 230

Ushakov, G.V., and Yu. N. Yelobozhev, Brittleness (Institute of Mechanical Plastic Deformation During Impact Stress Under Low-Temperature Conditions. 238

Glikman, L.A., and V.P. Rebtch, Physical Nature of Metal Fatigue. 246

Izobrev, I.V., and N.M. Sereina (Instimach - Central Scientific Research Institute of Technology and Metallurgy), Fracture Strength of Large

Card 7/10

TEPLOVA, Ye.D., kand.tekhn.nauk; TEPLOV, J.S. inzh.; MIRONENKO, Ye.A.,  
tekhnik

Effect of nickel and copper on the temper brittleness of  
structural chromium-molybdenum-vanadium steel. Metallovedenie 3:39-  
50 '59. (MIRA 14:3)  
(Chromium-molybdenum steel--Brittleness)

TEPLOVA, Ye. I.

USSR/General Problems of Pathology - Tumors.

T-5

Abs Jour : Ref Zhur - Bioi., No 4, 1958, 17484  
Author : Teplova, Ye. I.  
Inst :  
Title : Blood Sugar Studies in Hodgkin's Disease.  
Orig Pub : Probl. gematol. i perelivaniya krovi, 1956, 1, No 4,  
          439-441.

Abstract : In 19 of 21 patients with Hodgkin's disease the fasting blood sugar was found to be decreased (70-80 mg%); in exacerbation, most of the patients showed progressing hypoglycemia which paralleled overall deterioration. Following a single load, the sugar curves had two peaks; none of the cases showed a return of the blood sugar to its initial level after 2 hours; the sugar curves following a double load (according to Staub-Traugott) were abnormal. Following an adrenalin injection there was

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USSR/General Problems of Pathology - Tumors.

T-5

Abs Jour : Ref Zhur - Biol., No 4, 1958, 17484

usually a slight and belated elevation of the sugar  
curve.

Card 2/2

~~SECRET~~ PROZOROVSKIY, B.M., professor; GORELOV, I.Z.; TEPLOVA, Ye.I. (Leningrad)

Fungous diseases in the clinic treatment of internal diseases. Klin.  
med. 34 no.12:41-44 D '56.  
(MLRA 10:2)

1. Iz pervoy terapeuticheskoy kafedry (zav. - prof. B.M.Prozorovskiy)  
Leningradskogo instituta uovershenstvovaniya vrachey imeni S.M.Kirova.  
(FUNGUS DISEASES, case reports)

PROZOROVSKIY, B.M., prof., TEPLOVA, Ye.I., kand.med.nauk

Fungous complications in treatment with antibiotics. Vrach.delo  
no.10:1037-1041 O '58  
(MIRA 11:11)

1. Pervaya terapeuticheskaya kafedra (zav. - prof. B.M. Prozorovskiy)  
Leningradskogo instituta usovershenstvovaniya vrachey,  
(MEDICAL MYCOLOGY)  
(ANTIBIOTICS)

TEPLIOVA, YE.N.

Lemmings, Un'ya Valley

Migration of forest lemmings (*Myopus schisticolor Vaneogradovi Sk. et Rajew.*) to the middle course region of the Un'ya River. Zool. zhur. 31, no. 4, 1952.

9. Monthly List of Russian Accessions, Library of Congress, OCTOBER 1952 - 1953, Uncl.

TEPLOVA, Ye.N.; TEPLOV, V.P.

Nutrition of pike in the upper Pechora Valley. Vop.ikht. no.1:94-103 '53.  
(MLRA 7:6)

1. Pechoro-Ilychskiy gosudarstvennyy zapovednik.  
(Pechora Valley--Pike)

TEPLOVA, Ye.N.

New zoological discoveries in the region of the Pechora-Ilych State Preserve.  
Zool.zhur. 32 no.5:1027 S-0 '53.  
(MLRA 6:10)

1. Pechoro-Ilychskiy gosudarstvennogo zapovednik.  
(Pechora-Ilych State Preserve)

TEPLOVA, Ye.N.

Birds in the region of the Pechoro-Ilych Preserve. Trudy Pech.-II  
gos. zap. no.6:5-115 '57. (MIRA 11:7)  
(Pechoro-Ilych Preserve--Birds)

TEPLOVA, Ye. N.

Amphibians and reptiles of the Pechoro-Ilych preserve. Trudy Pech.-  
Il gos. zap. no. 6:116-129 '57. (MIRA 11:?)  
(Pechoro-Ilych Preserve--Amphibia)  
(Pechoro-Ilych Preserve--Reptiles)

"APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R001755320001-7

TEPILOVA, Ye. I.

Feeding habits of cultivated and wild carp reared in the Kuban  
limans. Trudy AZNIRKH no. 6183-177 '63. (MIRA 17:8)

APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R001755320001-7"

MUSHKIN, Yu.I.; FINKEL'SHTEYN, A.I.; BALABANOV, G.P.; TEPLOVA, Z.G.

Infrared and ultraviolet spectra of some derivatives of terephthalic acid. Zhur.ob.khim. 33 no.10:3249-3252 O '63.  
(MIRA 16:11)

1. Gosudarstvennyy nauchno-issledovatel'skiy i proyektnyy  
institut azotnoy promyshlennosti i produktov organicheskogo  
sinteza.

GOL'DBERG, N.A.; GORBUSHENKOV, V.A.; TEPLIOVA, Z.G.

Some physical properties of m-chlorophenylisocyanate. Zhur.  
prikl. khim. 37 no. 4:745-747 Ap '64. (MIRA 17:5)

S/AN7/39/000/00/020/030

E031/E113

AUTHOR: Zolotubin, V.X.

TITLE: The Scientific-Technical Conference at Khar'kov  
Aviation InstitutePERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedenii, Aviatsionnaya  
Tekhnika, 1959, No. 4, pp. 101-105 (USSR)ABSTRACT: In May 1959, the 16th Conference of Professional and  
Teaching Staff took place.Card 9/11 The Technology of Aircraft Construction and Metal Working  
Section. A New Model of the Plasticity of Metals" by  
I.S.M. Alchikov. "The Forging Extrusion of Large  
Components from Sheet Metals by Assistant A.P. RataukovOn the Problem of Constructing Second Order Curves in  
Aircraft Construction by Senior Instructor N.N. Mardzayev. "The Electric Gauget Welding of Thin  
Pieces of Metals" by Assistant L.M. Tarasov. "The Influence  
of Plastic Deformation on the Properties of Austenitic  
Stainless Steel at Various Temperatures" by Assistant  
N.V. Pisareva. "The Deformation of Nonferrous Metals  
and Alloys at Low Temperature" by Assistant  
S.M. Matvichev. "The Investigation of Phase Changes in  
Austenitic Steels Previously Subjected to Cold or Heating  
Post Temperature" by Candidate of Technical Sciences  
A.N. Chubrikov and Assistant V.P. Bakhtirov. "The Influence  
of the Temperature and Velocity of Deformation on the  
Phase Changes of Austenitic Steels" by Candidate of  
Technical Sciences A.M. Chubrikov and Fellow F.P. Parkhov.Card 9/12 Design and Production of Optimum Technical Grouping in the  
Production of Aircraft by Assistant Yu.A. Dobrovolski. "On the Use of Explosives in the  
Technology of Drop Forging" by Assistant E.I. Zarayski.  
"Welding by Friction" by Assistant E.P. Olsorozov.  
Structure of Aircraft Sections."On the Problem of Protecting the Structure of Aircraft  
from Aerodynamic Heating" by Doctor V.Y. Dzhobava.  
"Special Methods of Protection from Aerodynamic Heating"  
by Candidate of Technical Sciences L.I. Melashvili.  
"The Influence of the Parameters of Thermally Isolated  
Packets on Heat Transfer Characteristics" by Assistant  
A.T. Kobayashvili. "Aircraft Structures Made from  
Ceramic Sheets" by Doctor G. Shalashilov. "An Apparatus for Investigating  
Reactive Static Loading" and "High Temperature by  
Assistant L.I. Melashvili. "The Approximate Calculation  
of the Weight Taking into Account the Technical Features  
of the Aircraft Structure" by Candidate of Technical  
Sciences L.D. Arson. "The Determination of Stress Increase in  
Steel as a Result of Riveting" by Assistant  
Card 10/11 - Yu.G. Butina. "The Ultrasonic Altimeter (Soundings Device)"  
The Scientific-Technical Conference at Khar'kov Aviation Institute  
and "The Radio-Control and Autopilot of an Experimental  
Model" by Engineer I.P. Teplyar.

TEPLAKOV, I.N., kand.tekhn.nauk

A useful book ("Economics of water management" by D.T.Zuzik.  
Reviewed by I.N.Teplyakov). Gidr.stroi. 31 no.3:63-64 M. '61.

1. Zaveduyushchiy otdelom ekonomiki vodnogo khozyaystva  
Kazakhskogo nauchno-issledovatel'skogo instituta vodnogo  
khozyaystva.

(MIRA 14:4)

(Hydraulic engineering)  
(Zuzik, D.T.)

TEPLY, B.

Albert Struma's Vodni pogoni na Slovenskem: gradivo za zgodovino (Water-Power Installations in Slovenia; Material for a History); a book review. p.292.  
(Slovenski Etnograf. Vol. 9, 1956, Yugoslavia)

SO: Monthly List of East European Accessions (EEAL) C  
LS, Vol. 6, no. 7, July 1957, Uncl.

TEPLY, B.

The development of railroad workshops.

P. 192 (Zeleznici Technika) Vol. 5, No. 7, July 1957, Czechoslovakia

SO: MONTHLY INDEX OF EAST EUROPEAN ACCESSIONS (EEAI) LC. - VOL. 7, NO. 1, JAN. 1958

TEPILY, Erwin, prof. dr ing.

Interrelation of the economic limit of open pit mining in relation  
to the underground method. (thesis met zbor 3:23.02.1964.)

• Faculty of Technology, Zagreb.

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TEPLY, J.: BEDNAR, J.

Contribution to Z. Spurny's article "Radiation Chemistry."

1776 (Chemicke Listy) Vol 51, no. 9 Sept. 1957. Praha, Czechoslovakia.

SO: Monthly Index of East European Accessions (EEAI) LC, Vol. 7, no. 1, Jan 1958

TEPLY, J.

Simple chemical dosimeter. Jiri Teply and Jaroslav Bednář (Ant. Zápotocký Military Tech. Acad., Brno, Czech.). *Jaderná energie* 4, 202-5(1968).—Satd. soln. of  $\text{CHCl}_3$  in  $\text{H}_2\text{O}$  is proposed as a chem. dosimeter. The radiolysis product,  $\text{HCl}$ , is detd. by titration with 0.001*N* NaOH, or conductometrically. The soln. is stable and easily prep'd. It has been calibrated for  $\gamma$ -rays from  $\text{Co}^{60}$ ,  $\beta$  from  $\text{Sr}^{90} + \text{Y}^{90}$ , and x-rays (150 kv. peak). The yield is independent of the radiation intensity within a wide range, and does not vary much with the nature of the radiation. The dosimeter can be used from 1000 to 40,000 r. [J.-N.]

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B42

CZECHOSLOVAKIA/Physical Chemistry - Radiation Chemistry.  
Photochemistry. Theory of the Photographic Process.

B

Abs Jour : Ref Zhur Khimiya, No 19, 1959, 67330  
Author : Teply, Jiri; Bednar, Jaroslav  
Inst :  
Title : Radiation Chemistry of an Aqueous Solution of Chloroform.  
Orig Pub : Jaderna energie, 1958, 4, No 12, 389-390  
  
Abstract : An aqueous solution of  $\text{CHCl}_3$  ( $7 \times 10^{-3}$  M) was irradiated with unfiltered x-rays,  $\gamma$ -rays of  $\text{Co}^{60}$  and  $\beta$ -rays of  $\text{Si}^{90}$  /  $\text{Y}^{90}$ . The main reaction product was HCl. The end of the induction period the radiation chemical yield of HCl attained  $26.6 \pm 1.3$  on x-ray irradiation,  $25.8 \pm 1.3$  on  $\gamma$ -ray irradiation, and  $24.4 \pm 1.3$  on  $\beta$ -ray irradiation. 3.9-4.7 molecules of HCl were given off per  $\text{O}_2$  molecule consumed. The induction period depends on the reaction between the OH and  $\text{CHCl}_3$  radicals ( $\text{OH} + \text{CHCl}_3 = \text{H}_2\text{O} + \text{CCl}_3$ ). The HCl concentration is related

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CZECHOSLOVAKIA/Physical Chemistry - Radiation Chemistry.  
Photochemistry. Theory of the Photographic Process. B

Abs Jour : Ref Zhur Khimiya, No 19, 1959, 67330

to the irradiation time  $t$ , the irradiation intensity  $I$ ,  
and the  $\text{CHCl}_2$  concentration by the equation  $\frac{[\text{HCl}]}{[\text{CHCl}_3]} = \frac{k_1}{k_2} \cdot \frac{1 - \exp(-k_1/\text{CHCl}_3/t)}{1 - \exp(-k_1/\text{CHCl}_3)}$ , where  $k_1$   
and  $k_2$  are constants. In 0.8 N  $\text{H}_2\text{SO}_4$ ,  $\text{Fe}^{2+}$  ions were  
oxidized to  $\text{Fe}^{3+}$  in the presence of excess  $\text{O}_2$  and excess  
 $\text{CCl}_3\text{O}_2$  radical which is formed from the  $\text{CCl}_3$  radical in  
the presence of  $\text{O}_2$  and is converted to  $\text{CCl}_3\text{OH}$ . -- T. Levi

Card 2/2

COUNTRY : Czechoslovakia  
CATEGORY : Physical Chemistry--Radiation chemistry. Photo-  
chemistry. Theory of photographic process. B-10  
ABS. JOUR. : RZKhim., No. 22 1959, No. 77869  
AUTHOR : Bednar, J. and Teply, J.  
INST. : Not given  
TITLE : The Yield of Hydrogen Peroxide in Water Irradiated  
with X-rays  
ORIG. PUB. : Chem Listy, 52, no 6, 1028-1034 (1958); Collection  
Czechoslov Chem Commun, 24, No 1, 127-134 (1959)  
ABSTRACT : The authors have investigated the effect of x-rays  
(150 kev) on water and on aqueous KBr solutions  
( $10^{-6}$ - $10^{-7}$  M), saturated with oxygen and free of  
 $\text{CO}_2$ , both in acid medium and in neutral medium.  
The value of  $G(\text{H}_2\text{O}_2)$  after irradiation with x-rays  
is greater than after irradiation with  $\text{Co}^{60}$   
gamma rays.  $G(\text{H}_2\text{O}_2)$  decreases linearly with  
increasing [KBr]; the decrease is the more  
rapid, the higher the pH. The  $G(\text{H}_2\text{O}_2)$  in neutral  
medium is higher than in acid medium. In water,

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TEPLY, J.; ZILVAR, V.; SIMORDA, J.

Equipment for investigating technological radiation processes applied in working up plastics and India rubber. p. 151

JADERNA ENERGIE. (Ministerstvo energetiky) Praha, Czechoslovakia, Vol. 5, No. 5  
May 1959

Monthly List of East European Accessions (EEAI), LV, Vol. 8, No. 7, July 1959  
Uncl.

AUTHOR: Jiří Teply

CZECH/8-59-9-1/14

TITLE: Physico-Chemical Bases of Radiation Chemistry

PERIODICAL: Chemické Listy, 1959, Nr 9, pp 897-908

ABSTRACT: After a short introduction in which the reviewer draws attention to a number of monographs and reports, mostly in other languages (Refs 2-5) with a few in Czech (Refs 1 and 7) he goes on to consider the following topics: Properties of ionising radiation. This section deals briefly with the character of the radiation, photoeffect (Ref 2), Compton scattering (Ref 3), the formation of electron pairs (Ref 8), the ion density of traces, specific ionisation (cf Ref 9) and hot points, as well as linear energy transfer, roentgen equivalent physical, rad, absorption energy velocity, and dose rate (cf Refs 10,11,12). (Legend Fig 1. The Compton and photoelectric effect as a fraction of the absorption energy of X-ray irradiation in water at different energies (after Bacq and Alexander, Ref 3). Abscissa; effective radiation energy; ordinate; % Compton effect; 1, Compton electrons as a fraction of total number of secondary electrons; 2, energy of Compton electrons as a

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CZECH/8-59-9-1/14  
Physico-Chemical Bases of Radiation Chemistry

fraction of total energy absorbed. (The difference between curve values and 100% is due to photoelectrons. Pair formation does not occur in this range of energy). Intermediate products and their reactions. The following are considered: electrons, positive ions, negative ions, "pressure mass spectrometry", activated molecules, sponge type protection (Ref 16), luminescence and free radicals (Ref 17), and steric factors in reactions (Ref 18). (Other section Refs 13, 14, 15). Table 1 gives the absorption energies corresponding to atmospheric dose of 1 r. (after Haissinky (Ref 4)). Table 2 shows factors for the conversion of energy units. Table 3 shows yields of  $G(Fe^{3+})$  ferrosulphate dosimetry for certain radiations. Velocity of reactions in radiation chemistry. The velocity of a radiochemical reaction is given by the amount of substance changed or formed in relation to the dose or energy absorbed (i.e. the radiochemical yield). Eq (1) gives the absorbed dose (in rads) which corresponds to an aerial dose of 1 r. (Ref 19). The measurement of absorbed doses is usually carried by chemical dosimetry (cf Refs 20, 21), a relative method; ✓

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Physico-Chemical Bases of Radiation Chemistry CZECH/8-59-9-1/14  
absolute methods also exist (Ref 4a). Spatial separation of the reacting particles has a marked influence on the kinetics of radiochemical processes. Intensity of radiation also has an effect (cf Ref 22). The rotating sector (or interrupted illumination, Ref 23) method of photochemistry is applicable, in some cases, for the measurement of the average reaction half-life (i.e. Refs 24, 25, 26). Direct and indirect effects of radiation. Eqs (2) and (3) are simplified reaction schemes for indirect effects, which, assuming water and C (starting substance) concentration are unchanged, can be represented by Eqs (4) and (5); these integrate to Eqs (6) and (7), after introduction of initial conditions. End product D rises initially in an exponential fashion according to Eq (7), then linearly. R, the intermediate product, is thus constant. The achievement of the stationary state is characteristic of the systems considered, as for chain reactions. The period for stationary state establishment is known as the induction period and is generally characteristic for indirect effects (Ref 27). At higher ✓

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Physico-Chemical Bases of Radiation Chemistry  
concentrations of the dissolved substance higher reaction yields are achieved (Ref 28). Dissolved molecular oxygen has a special role.

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Research methods. The main methods for research in radiochemistry are considered to be chemical. Sensitive analytical methods are required for the main radiolysis products resulting and for the measurement of the dependence of their concentration on the energy absorbed. This dependence determines the radiochemical yield. The true value of the yield is the initial yield, i.e. the extrapolated yield for lowest dose. Other information is obtained from the relationship of yield to concentration of the substance being examined, intensity and type of radiation as well as thermal dependence of radiation yield, gaseous and liquid phase yields, effect of added substances (cf Refs 29,30,31,37), the use of isotopes, comparisons with photochemistry (Refs 32, 33), mass spectra (cf Refs 17, 34, 35) and the use of electron paramagnetic resonance (Ref 36).

Methods of radiation. The following types are reviewed: external radiation, internal radiation with auto-radiolysis as a special type. The purification and ✓

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Physico-Chemical Bases of Radiation Chemistry  
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purity of compounds used is also considered (cf Ref 38).  
Conclusions. The reviewer considers that the stage has  
been reached where observations are being coordinated and  
that the methods of radiochemistry will yield important  
information on, for example, kinetics, molecular  
chemistry and utilisation of radioactive masses.  
There are 1 figure, 3 tables and 44 references, of which  
1 is Soviet, 2 are French, 10 are Czech and 31 are in  
English.

ASSOCIATION: Ústav jaderné fysiky ČSAV, Praha  
Card 5/5 (Institute of Nuclear Physics, Czechoslovak Academy  
of Sciences, Prague) ✓

TEPLY, J.; BEDNAR, J.

"Yields of hydrogen-peroxide formation in water irradiated by X rays." In German. p. 127  
COLLECTION OF CZECHOSLOVAK CHEMICAL COMMUNICATIONS, PRAHA, CZECH.,  
Vol. 24, No. 1, Jan 1959.

Monthly List of East European Accessions (EEAI), LC, Vol. 8, No. 6, Sept. 59.  
Unclassified

TEPLY, J.

✓ Radiation chemistry of aqueous solutions of organic halogen derivatives. I. Radiolysis of an aqueous solution of chloroform. J. Teply (Ustav jaderné fysiky ČSAV, Prague). *Collection Czechoslov. Chem. Commun.*, 24, 1033-42 (1959).—The dependencies of the radiation yield of HCl on the rate of energy absorption, on the  $\text{CHCl}_3$  concn., and on the temp. were studied. The effect of the dissolved  $\text{O}_2$  and the kinetics of the induction period are discussed.  
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29

AUTHORS:

Teply, Jiří and Seidl, Karel

CZ/38-60-1-3/24

TITLE:

Organic Moderators and Coolants

PERIODICAL:

Jaderná Energia, 1960, No. 1, pp. 6 - 8

TEXT:

The author discusses the problems arising from the utilization of organic moderator coolants for nuclear reactors and analyses some criteria for the choice of organic materials. He concentrates on polyphenyl which he considers best suited for this purpose. Next, he deals with property changes of several compounds caused by radiation and heating. Detailed descriptions are given of the Organic Moderated Reactor Experiment (OMRE-Idaho) and the Canadian heavy-water moderated power reactor using an organic coolant. There are 4 diagrams, 1 table and 8 references, 1 of which is Soviet, 6 American and 1 French.



ASSOCIATION:

Ústav Jaderného výzkumu ČSAV, Praha (Nuclear Research Institute  
ČSAV, Prague)

Card 1/1

Distr: 4E2c(j)/4E3d

✓ Radiation chemistry of aqueous solutions of organic halide derivatives. III. Reactions caused by the radiation or by the hydrogen peroxide in solution of chloroform and ferrous ions. J. Bednář and J. Teply (Vojenská akad.

A. Zápotockého, Brno, Czech). Collection Czechoslov.

Chem. Commun. 25, 842-52(1960); cf. CA 54, 16131g.

The existence was confirmed of  $\text{CCl}_3\text{O}_2$  radicals which were formed during the radiolysis of aq.  $\text{CHCl}_3$  solns. in the presence of  $\text{O}_2$ . These radicals, having a peroxide character, cause an increase of the oxidn. of the  $\text{Fe}(\text{II})$  ions during the radiation or by the  $\text{H}_2\text{O}_2$ . The reaction of the  $\text{OH}^-$  radicals with the  $\text{CHCl}_3$  also was confirmed. IV. The effect of the bromide and thallium ions on the radiolysis of chloroform and carbon tetrachloride solutions. J. Bednář. Ibid. 25, 934-7(1960).—The  $\text{Br}^-$  causes a decrease in the amt. of the halide deriv. decompd.  $\text{Tl}^+$  has no effect on the yield of  $\text{HCl}$  in the  $\text{CCl}_4$  solns. and causes a decrease of the yield in the  $\text{CHCl}_3$  solns. R. Bridge

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1-TAJ(NC)  
1-TAJ(MAY)

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TEPLY, J.

Radiation chemistry of aqueous solutions of organic halogen derivatives. II. Mechanism of radiolysis of an aqueous chloroform solution. Coll Cz Chem 25 no.1;24-30 Ja '60. (EEAI 9:12)

1. Jetzige Adresse: Institut fur Kernforschung, Tschecheslowakische Akademie der Wissenschaften, Prag.  
(Halogens) (Organic compounds) (Radiation)  
(Chloroform) (Water) (Solutions)

BEDNAR, J.; TEPY, J.

Radiation chemistry of aqueous solutions of organic halogen derivatives.  
III. Reactions caused by radiation of hydrogen peroxide in solutions  
of chloroform and iron(II)-ions. Coll Cz chem 25 no.3:842-852 Mr '60.

(EEAI 9:12)

1. Militarische Akademie "A.Zapotocky" Brno (for Bednar). 2.  
Jetzige Adresse: Institut fur Kernphysic, Tschechoslovakische Akademie  
der Wissenschaften (for Teply)

(Halogens) (Organic compounds) (Radiation)  
(Hydrogen peroxide) (Chloroform) (Iron)  
(Ions) (Water) (Ions)

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D291/D301

AUTHORS: Teply, Jiří, and Kacena, Vladimír

TITLE: Research in radiation and hot-atom chemistry

PERIODICAL: Jaderná energie, no. 10, 1961, 348-351

TEXT: The article outlines general tasks of radiation and hot-atom chemistry, describes the research performed in this field by the Ústav jaderného výzkumu ČSAV (Nuclear Research Institute, Czechoslovak AS) and lists the irradiation equipment at its disposal. In the field of radiation chemistry, the Institute studies primary processes taking place in the radiolysis of simple compounds, evaluates the radiation stability of various materials, and investigates possibilities of chemical dosimetry. The mechanism of radiolytic processes is studied especially in view of free radicals which form active intermediate products. In these studies, the following methods are used: kinetic studies of radiolysis of organic substances with dissolved radical interceptors ( $\text{FeCl}_3$ , diphenylpikryl hydrazil, etc.); a new method to study X

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Research in radiation ...

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free radicals, originating by irradiation of substances in frozen state, from the spectra of electron-paramagnetic resonance; a method prepared for investigating elementary processes in gaseous phase by means of mass spectrometry. Subjects of individual papers are: The radiation chemistry of watery chloroform solutions (the paper confirms the reaction mechanism, gives a kinetic explanation of the induction period and investigates the influence of other solutions); The radiation chemistry of bi- and tri-valent Fe-solutions (the paper investigates the competing influence of  $\alpha$ ,  $\alpha'$ -dipyridyl, bromidic and thallic ions on the radiation redox reaction); The radiolysis of tetrachloromethane (the paper investigates the suitability of this agent as a dosimetric system in mixtures with ethanol and resazurin); The mechanism and kinetics of the oxidation of watery cystine solutions, Investigations of the radiation-chemical stability of extraction materials and organic coolants primarily employ gas chromatography. Experiments on chemical dosimetry are made with the above-mentioned tetrachloromethane system and some inorganic crystals such as Mn, Mg and Sm activated  $\text{CaSO}_4$ . Apparatus at disposal for radiation-chem-

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Research in radiation ...

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D291/D301

mical experiments are: a 1 Mev van de Graaff accelerator; a radiation source of approximately 250 curie Co-60 with an intensity of  $2 \cdot 10^3$  r/min in the direct vicinity of the radiator, and 75 r/min in a distance of 30 cm; a radiation source of 5 curies Co-60 with a maximum intensity of 50 r/min; some Ra, Co-60 and Cs-137 sources for dosimetric purposes with activities ranging from several milligram-equivalents Ra to several tens of gram-equivalent Ra; and x-ray sources with a maximum of 60 and 250 kv. Additional x-ray sources for 90 and 200 kv, both with a maximum flux of 200 mA, are under construction, and radiation sources of 1,000, 2,000 and 20,000 curies Co-60 are planned to be installed in 1962/63. The Institute is also equipped with a gas chromatograph with thermally conducting cells and a spectrograph for electron paramagnetic resonance. The spectrograph operates on the 3.20-cm wave with a modulation of 100 kc/sec, and has a sensitivity of the order of  $10^{15}$  spins. Research in the field of hot atoms can be divided into the following three groups:  
(1) Early studies of the chemical states of As-76 (the distribution of As-76 between oxidation stages As<sup>III</sup> and As<sup>V</sup> was studied

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Research in radiation ...

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on Na-cacodylate,  $\text{As}_2\text{O}_3$  and  $\text{Na}_2\text{HAsO}_4$ ); (2) Studies performed and published by members of the Institute during their visit to the USSR: These studies dealt primarily with the Szilard-Chalmers reaction and resulted in the development of a so-called "dynamic" separation method for highly-active isotopes, where the irradiated solution is circulated and continuously processed to eliminate a decrease of specific activity which is otherwise caused by transfer reactions. Two studies, conducted in Moscow under the supervision of Professor A.N. Nesmeyanov, dealt with the S-32 ( $n, p$ ) P-32 reaction in the hydrogen sulfide - benzene system, and with B-80 and B-82 reactions; (3) In 1960, initial studies were undertaken with the experimental reactor, investigating the behavior of atoms after  $(n, \gamma)$  and after  $(n, p)$  reactions. These studies were also the subjects of dissertations prepared at the Nuclear Research Institute by 4 students of the ČVUT (Czech Institute of Technology). In the studies of  $(n, \gamma)$  reactions, the behavior of analog systems, containing P or As is compared, and the activity distribution in inorganic and organic compounds is

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investigated. So far, a paper has been published on the behavior of As-76 in the AsCl<sub>3</sub>-benzene system. In the studies of (n, p) reactions, the Cl-35, S-35 reaction was used to investigated the distribution of S-35 atoms in various compounds which can originate at the irradiation of chlorobenzene-benzene, eventually chlorohexane - hexane solutions. The two reactions show quite different mechanisms: while another isotope of the same element originates in (n,  $\gamma$ ) reactions, the atom converts into a different element in (n, p) reactions. There are 17 Soviet-bloc references.

ASSOCIATION: Ústav jaderného výzkumu ČSAV (Nuclear Research Institute, Czechoslovak AS)

Card 5/5

SPURNY,Z.;TEPLY,J.

Second national conference on radiation chemistry in Prague.  
Jaderna energie 8 no.2:71 F '62

TEPLY, J.

Heavy duty vibration screens for ceramic slurries. Stavivo  
40 no.12:414-418 D '62.

1. Prerovske strojirny, n.p. Vyzkumy ustav stavebnich a  
keramickych stroju, Brno.

TEPLY, Jiri; JANOVSKY, Igor

Effect of radiation on the extractive process and extraction  
agents. Jaderna energie 10 no. 2:40-46 F '64.

1. Ustav jaderneho vyzkumu, Ceskoslovenska akademie ved,  
Rez.

TEPLY, Jiri

Vibration machines at the Leipzig Fair 1962. Inz  
stavby 10 no.4: Suppl. 45-47. Ap '62.

1. Vyzkumny ustav stavebnich a keramickych stroju, Brno.

TEPLY, Jiri

The PVM 600 high-frequency immersion vibrator. Inz stavby  
11 no.4:Supplement: Mechanizace ne.4:54-58 '63.

1. Vyzkumny ustav stavebnich a deramickych stroju, Brno.

TEPLY, J.; STULIK, V.; TEICHMANOVA, M.; MORAVEC, J.

Radiation chemical formation of uranium peroxide in ketone  
solutions of uranyl nitrate. Coll Cz Chem 30 no.1:1-9 Ja  
'65.

1. Institute of Nuclear Research of the Czechoslovak Academy of Sciences, Rez near Prague (for Teply, Teichmanova and Moravec).
2. Department of Technical and Nuclear Physics of the Czech Institute of Technology, Prague (for Stulik). Submitted February 19, 1963.

TEPLY, J.; HABERSBERGEROVA, A.

Effects of some solutes on the radiolysis of methanol. Coll  
Cz Chem 30 no.3:785-792 Mr '65.

1. Institute of Nuclear Research of the Czechoslovak Academy  
of Sciences, Rez near Prague. Submitted July 17, 1963.

TEPLY, J.; HABERBERGEROVA, A.; VACEK, K.

Radiolysis of pure methanol. Coll Cz Chem 30 no.3:793-801  
Mr '65.

1. Institute of Nuclear Research of the Czechoslovak Academy of Sciences, Rez near Prague. Submitted April 28, 1963.

TEPLY, J.

A account of the 5th Czechoslovak Seminar on Radiation  
Chemistry. Chem listy 59 no.6:764 Je '65.

DANEK, Vaclav, inz.; TEPLY, Karel, inz.

Results of the experimental operation of program controlled  
knee-type milling machines in the Tovarny na obrabeci stroje  
Kurim National Enterprise. Stroj vyr 11 no.5:222-232 My '63.

1. Tovarny na obrabeci stroje Kurim, n.p. Kurim.

Czechoslovakia/Chemical Technology. Chemical Products and Their Application --  
Food industry, I-28

Abst Journal: Referat Zhur - Khimiya, No 2, 1957, 6696

Author: Teply, Milos

Institution: None

Title: Problems of the Production and Use of Pure Cultures of Lactic Acid  
Bacteria

Original  
Publication: Prumysl potravin, 1955, 6, No 12, 594-601

Abstract: Description of the development of production of lactic acid cultures  
(LC) in Czechoslovakia. Discussed are the problems of setting up  
and construction of establishments for the production of LC and of  
their inclusion in the framework of the dairy industry or of that  
of the scientific research institutes. Shortcomings in work with  
LC, at dairy plants, are pointed out. Basic information is given  
concerning the investigation, propagation and control of LC, and  
also on problems involved in further investigations of LC.

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T E P L Y M I L O S

CZECHOSLOVAKIA/Chemical Technology - Chemical Products and Their Application. Food Industry. I-13

Abs Jour : Ref Zhur - Khimiya, No 1, 1958, 2991

Author : Teply Milos

Inst :

Title : Technical Development of the Production of Rennet and Other Auxiliary Agents for the Dairy Industry.

Orig Pub : Prumysl potravin, 1956, 7, No 12, 545-549

Abstract : No abstract.

Card 1/1

CZECHOSLOVAKIA / Chemical Technology. Food Industry. H-28

Abs Jour: Ref Zhur-Khimiya, No 23, 1958, 79467.

Author : Teply, M.

Inst : Not given.

Title : Analysis on the Quality of Pure Lactic Acid Bacteria.

Orig Pub: Prumysl potravin, 1957, 8, No 9, 465-470.

Abstract: Results are presented concerning the quality control, at inter-plant and industrial laboratories, of pure cultures of the lactic acid bacterias brand "Lactoflora" produced in Czechoslovakia. Measures are presented as to the improvements in the quality of pure cultures.

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TEPLY, M.

CZECHOSLOVAKIA/Chemical Technology - Food Industry.

APPROVED FOR RELEASE: 07/16/2001 CIA-RDP86-00513R001755320001-7"

Abs Jour : Ref Zhur - Khimiya, No 16, 1958, 55652

Author : Gladikova, Mashek, Teply

Inst : -

Title : A New Czechoslovakian Thermophylic Culture for the Preparation of Cheese.

Orig Pub : Prumysl potravin, 1957, 8, No 10, 522-524

Abstract : A Method is described for the preparation of thermophylic culture of lactic acid bacterias from native (Czechoslovakia) milk, which culture is suitable for the production of Cheddar and Swiss cheese.

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26

TEPLY, M.; MAXA, V.; HYLMAR, B.

New technique of microbiological control in the food industry. p. 408

PRUMYSL POTRAVIN. (Ministerstvo potravinarskeho prumslu) Praha,  
Czechoslovakia, Vol. 10, no. 8, Aug. 1959

Monthly list of East European Accessions (EEAI), LC. Vol. 9, no. 2,  
Feb. 1960

Uncl.

TEPLY, M; VAYA, V.

Ten years from the introduction of Lactoflora pure fermenting cultures for  
dairies. p. 512

PRUMYSL POTRAVINY. (Ministerstvo potravinarského průmyslu)  
Praha, Czechoslovakia Vol. 10, no. 10, Oct. 1959

Monthly List of East European accession, (REAI), IC, Vol. 5, No. 12, Dec. 1959

Uncl.

TEPLY, Milos, inz., dr.

Effect of the nisine on pure cultures of lactic fermentation  
bacteria. Prum potravin 13 no.4:198-200 Ap '62.

1. Sdruzeni mlekaren, Vyroba cistych mlekarskych kultur, Praha.

HYLMAR, Bohumil, inz.; TEPLY, Milos, inz., dr.

A new simplified method for controlling the gentle milk  
pasteurization. Prum potravin 13 no.4:205-206 Ap '62.

1. Sdruzeni mlekaren, Vyroba cistych mlekarskych kultur, Praha.

TEPLY, Milos, inz., dr.

Determining the antibiotic nisine by diffusion method in using  
Lactobacilli. Prum potravin 13 no.5:270-273 My '62.

1. Sdruzeni mlekaren, Vyroba cistych mlekarskych kultur, Praha.



TEPLY, Milos, inz., dr.

Problem of using antibiotics in food industries. Pruz potravin 14  
no.4:175-177 Ap '63.

1. Sdruzeni mlekaren, Vyroba cistych mlekaarskych kultur, Praha -  
Vokovice.

MAXA, Veroslav, inz. dr.; TEPLY, Milos, inz. dr.

Nisin production by some strains of Streptococcus lactis. Prum  
potravin 15 no.3:142-145 Mr '64.

1. Mykoprodukta, Prague (for Maxa).
2. Association of Dairies, Plant of Pure Lactic Cultures, Prague  
(for Teply).

MAXA, Vratislav, dr.; TEPILY, Milos, inz. dr.

Production of Nislaktin, a new milk-based nisin concentrate. Prvn  
potravin 15 no.8:417-421 Ag '64.

1. Mykoprodukta, Prague (for Maxa). 2. Association of Dairies,  
Preparation of Pure Dairy Cultures, Prague (for Teply).

HEJZLAR, Miroslav, MUDr.; HYLMAR, Bohumil, inz.; TEPLY, Milos, inz. dr.

Improvement of microbiological control in the food industry.  
Prum potravin 15 no. 9:444-447 S '64.

1. Military Institute of Hygiene, Epidemiology and  
Microbiology, Prague, (for Hejzlar). 2. Sdruzeni mlekaren,  
Production of Pure Lactic Acid Cultures, Prague (for  
Hylmar and Teply).

MAXA, Veroslav, inz. dr.; TEPILY, Milos, inz. dr.

Use of nisin for the suppression of butyric fermentation  
in melted cheese. Prum potravin 15 no.9:469-474 S '64.

1. Mykoprodukta, Prague (for Maxa). 2. Sdruzeni mlekaren,  
Production of Pure Lactic Acid Cultures. Prague (for Teply).

MAXA, Veroslav, inz. dr.; TEPLY, Milos, inz. dr.

Use of nisin for the control of butyric fermentation clostridia  
in hard cheese production. Prum potravin 16 no.4:206-208 Ap '65.

1. Mykoprodukta, Prague (for Maxa). 2. Association of Dairies,  
Production of Pure Dairy Cultures, Prague (for Teply). Submitted  
December 12, 1964.

TEPLY, R.

Transplantation of the peritoneum; preliminary communication.  
Bratisl. lek. listy 31 no. 9-10:855-861 1951. (CLML 22:2)

1. Of the First Surgical Clinic of Charles University, Prague.

TEPLY, Richard, Primar MUDr.

Gunshot fractures during the peace time. Cas. lek. cesk.  
91 no.27:795-797 4 July 52.

l. Z I. chirurg. kliniky v Bratislave. Prednosta: prof. dr.  
Konst. Carsky.

(FRACTURES,  
gunshot)

(WOUNDS AND INJURIES,  
gunshot, with fract.)

TEPLY, R.

Function therapy (rehabilitation) in injuries. Lek. obzor. 2 no. 6-7:  
411-417; contd. June-July 1953. (CIML 25:4)

1. Of the First Surgical Clinic (Head--Prof. K. Carsky, M.D.) of  
KUNZ, Bratislava.

TEPLY, R.

Exercise therapy. Lek. obzor 2 no.8:482-490; contd. Aug 1953.  
(CLML 25:4)  
1. Of the First Surgical Clinic (Head--Prof. K. Oarsky, M.D.) of  
KUMZ, Bratislava.

TEPLY, Richard (KUNZ Bratislava, Mickiewicova ul. 13)

Functional therapy of injuries. Lek. obzor 3 no.1-2:38-45 1954.

1. Z I. chirurgickej kliniky KUNZ v Bratislave.  
(WOUNDS AND INJURIES, therapy,  
\*phys. ther.)  
(PHYSICAL THERAPY, in various diseases,  
\*wds. & inj.)

"APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R001755320001-7

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APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R001755320001-7"

TEFIK, V.  
POLAK, H.; TEPLY, V.; MAZANEC, M.

Effect of the central nervous system on glycolytic action of histamine. Sbor. lek. 56 no.5-6:117-125 June 54.

1. Z klinicko-fisiologicke laboratoare III. interni kliniky KU  
v Praze, prednosta prof. MUDr J. Charvat.

(HISTAMINE, effects,  
on glycogen metab. in denervated organs)

(GLYCOGEN, metabolism,  
eff. of histamine in denervated organs)

(CENTRAL NERVOUS SYSTEM, physiology,  
regulation of glycogen metab. after admin. of histamine)

TEPLYAKOV, A., inzh.

Automatic stoker. MTO 2 no. 6:41 Je '60.  
(Boilers, Marine) (Automatic control) (MIRA 14:2)

"APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R001755320001-7

TEPLYAKOV, A.; POSYSAYEV, N.; TAYMANOV, E.

Soviet engineering news, MTO 2 no.12:58-59 D '60.  
(Technological innovations) (MIRA 14:3)

APPROVED FOR RELEASE: 07/16/2001

CIA-RDP86-00513R001755320001-7"

TEPLYAKOV, A.

Structure of sowing acreages. Prof.-tekh. obr. 19  
no.7:18 Jl '62. (MIRA 15:12)

1. Direktor Argayashskogo uchilishcha mekhanizatsii sel'skogo  
khozyaystva No.1, Chelyabinskaya oblast'.  
(Farm mechanization—Study and teaching)

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SOV/662

## PHASE I ROCK EXPLOITATION

**Academy nauk SSSR. Energeticheskiy institut**  
**Fizicheskika, vyp. 21. Ispolnitel'skiy solnechnyy energeticheskiy (Heat Power**  
**Engineering, No. 21; Use of Solar Energy) Moscow, 1960. 195 p. Errata.**  
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**Perf., Ed.: V.A. Baum, Doctor of Technical Sciences, Professor, Ed. of**  
**Publishing House: G.B. Gorshkov) Tech. Ed.: I.S. Dzhurina.**

**PRINCIPAL: The publication is intended for power engineers and economists**  
**interested in the industrial utilisation of solar energy.**  
**CONTENTS: This collection of 19 articles is a continuation of an earlier**  
**work published under the same title in 1957. The articles present results**  
**of investigations conducted in the USSR during the last three years at**  
**the Laboratory on the Use of Solar Energy and Wind in the Energy**  
**Institute of the USSR (Institute of the USSR (SOF) Problems**  
**in Determining the operating characteristics of solar engines, depending upon**  
**the amount of solar energy received, are analyzed. No generalities**  
**are mentioned. References follow each article.**

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E032/E314

26.15/2

AUTHORS: Teplyakov, D.I. and Annayev, A.

TITLE: Study of the optimum receiver geometry for accurately-reflecting solar installations

SOURCE: Akademiya nauk SSSR. Energeticheskiy institut.  
Teploenergetika. no. 3, 1961. Poluprovodnikovyye  
preobrazovateli solnechnoy energii, 21 - 30

TEXT: Studies carried out at the Energeticheskiy institut AN SSSR (Power-engineering Institute of the AS USSR) showed that the efficiency of transformation of radiant solar energy by semiconductor devices is reduced owing to the nonuniform energy distribution over the working surface of the energy converter. It has therefore become necessary to equalize the energy flux over the surface of the receiver by suitably modifying the form of the concentrator. In previous papers by the first of the present authors and R. Aparisi (Ref. 4: Teploenergetika, no. 2, published by AS USSR, 1960) and the first of the present authors (Ref. 5: IFZh, 1958, no. 4) a differential equation was derived for the form of the receiving surface on which a parabolic mirror

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Study of the optimum ....

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E032/E314

gives a uniform energy distribution. In the present paper, the authors report a numerical integration of this differential equation, which was carried out with the aid of a mechanical integrator at the above institute. The integration was carried out by L.I. Korneyev and A.F. Koleganov under the direction of V.I. Gorushkin; the solutions were obtained for a wide range of values of the parameter

$$\epsilon = \frac{E_0 R_3}{E^x} \quad (3)$$

where  $R_3$  is the reflecting coefficient,

$E^x$  is the energy density at the surface of the required receiver, and

$E_0$  is the energy density of solar radiation on an area perpendicular to the direction of incidence ( $\epsilon = 0.01 - 1.0$ ) .

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E032/E314

Study of the optimum ...

Comparison of the numerical results with analytical expressions shows that the form of the receiver surface in polar coordinates is:

$$\rho = \frac{f_o \sqrt{\epsilon}}{\sqrt{\cos^3 \frac{U}{2}}} \quad (6)$$

This expression applies to the case of a parabolic reflector ( $\rho$  - radius of curvature,  $f_o$  - focal length,  $U$  - angle between the radius vector and the direction of the optical axis). For values of  $U$  up to  $60^\circ$ , the difference between the analytical and numerical calculations is less than 0.48%. For a reflecting parabolic cylinder the formula for the receiver surface is ✓

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Study of the optimum . . .

$$\rho = \frac{f_o \epsilon}{U} \cos \frac{\theta}{2} \quad (7)$$

where up to  $U = 60^\circ$  the above discrepancy is < 0.69%. These numerical and analytical calculations were checked experimentally in September-October, 1960, at the solar base of the Fiziko-tehnicheskiy institut AN TSSR (Physicotechnical Institute of the AS TSSR (Ashkhabad)). The apparatus was very similar to that described in detail by R. Aparisi in Ref. 3 (Experimental installation for the production of high temperatures, Solar-energy utilisation, AS USSR, 1957). A disadvantage of the Ashkhabad installation is said to be that it does not incorporate automatic tracking and must be adjusted manually. It was shown that it was possible to obtain a uniform energy distribution by making the receiver surface conform to the special shape required by the above calculations. The

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Study of the optimum ....

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solution obtained for uniform-distribution receivers and idealized concentrators was found to be applicable to glass projector mirrors with the receiver placed at a distance of 3 or 4 focal-image diameters from the geometrical focus. There are 5 figures, 2 tables and 6 Soviet-bloc references.

✓

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